In the Claims:

Please cancel claims 1 through 39 without any disclaimer and a prejudice to and add the following new claims.

40. A method for manufacturing a liquid crystal display device, comprising:

depositing spacers onto at least one of a first substrate and a second substrate, the spacers being distributed generally randomly along an inner surface of at least one of the first substrate and the second substrate, wherein the first substrate and the second substrate are made of a flexible polymer material, at least a portion of the spacers having polymerization initiating and enhancing (PIE) material on or within the spacers and the spacers substantially extending a distance between the first substrate and the second substrate;

depositing a liquid crystal and pre-polymer mixture onto an inner surface of the first substrate and an inner surface of the second substrate; and

laminating together the first substrate and the second substrate to form a liquid crystal cell,

wherein at least one polymer support extending between the first substrate and the second substrate is formed via polymerization in situ in response to the PIE material.

41. The method of claim 40, wherein the PIE material comprises at least one of an initiator and an accelerant of the in situ polymerization process.

42. The method of claim 41, wherein the initiator is at least one of an photoinitiator and an accelerator lacquer initiator, wherein if photoinitiators are used, polymerization is initiated by exposing a first side of the liquid crystal cell and a second side of the liquid crystal cell to ultraviolet light causing scission of the photoinitiator and release of free radicals around the spacers coated with the photoinitiator, and if the accelerator lacquer initiator is used polymerization is automatically initiated by the accelerator lacquer initiators after the liquid crystal and pre-polymer mixture is brought into contact with the accelerator lacquer such that

polymerization will proceed beginning around each spacer coated with the photoinitiator and/or the accelerator lacquer initiator.

43. The method of claim 40, further comprising coating, with a vapor barrier, an outside surface of the first substrate and an outside surface of the second substrate.

44. The method of claim 43, further comprising coating a layer of a transparent conductor on the first substrate and the second substrate, wherein the transparent conductor is patterned via at least one of chemical beam etching, electron beam etching and laser etching.

45. The method of claim 44, further comprising:

coating, with a polyimide solution, at least one of the first substrate and the second substrate coated with the transparent conductor; and

baking at least one of the first substrate and the second substrate to form a polyimide surface on thereon.

46. The method of claim 45, wherein the step of baking comprises baking at least one of the first substrate and the second substrate are baked for about one hour at a temperature of about 150°C.

47. The method of claim 44, further comprising rubbing the polyimide surface to develop an alignment layer for the liquid crystal cell.

48. The method of claim 40, further comprising surface etching glass spacers to create the spacers having PIE material on or therein.

49. The method of claim 48, wherein the step of surface etching glass spacers comprises surface etching glass spacers having a diameter of about 3 to about 3.5 μm.

50. The method of claim 48, wherein the step of surface etching comprises using

about a 1.25% solution of hydrofluoric acid for about 10 minutes while suspended in a solution in an ultrasonic vibration tank

51. The method of claim 48, further comprising coating, after washing, the etched spacers with a mixture of an adhesion promoter and at least one of the photoinitiator and the accelerator lacquer initiator by immersing the etched spacers into a solution containing the adhesion promoter and at least one of the photoinitiator, the accelerator initiator and an accelerant.

52. The method claim 51, wherein the adhesion promoter is a silane.

53. The method of claim 52, wherein the adhesion promoter is methacrylate silane.

54. The method of claim 51, wherein the accelerant is a tertiary amine.

55. The method of claim 54, wherein the tertiary amine is dimethyl amino benzene.

56. The method of claim 40, wherein the spacers comprise porous plastic and the PIE material is absorbed into the pores of the plastic.

57. The method of claim 40, wherein the spacers comprise high-surface area particles that are nanporous, mesoporous, or microporous.

58. The method of claim 40, wherein the spacers are at least one of dry sprayed and wet sprayed onto at least one of the first substrate and the second substrate.

59. The method of claim 40, wherein a polymer used for the in situ polymerization comprises at least one of an acrylic adhesive, epoxies and urethanes.

60. The method of claim 40, wherein a polymer used for the in situ polymerization

comprises an acrylic adhesive.

61. The method of claim 40, wherein the step of depositing comprises depositing spacers with a density of at least about 30 spacers/mm^2.

62. The method of claim 40, wherein the step of depositing a liquid crystal and pre-polymer mixture comprises depositing a liquid crystal and pre-polymer mixture comprising of about 10% photoinitiator and/or accelerator lacquer initiator pre-polymer and about 90% liquid crystal material.

63. The method of claim 40, wherein the flexible polymer material of the first substrate and the second substrate is polyethersulphone.

64. The method of claim 40, wherein the substrate has a glass transition temperature greater than 150°C.

65. The method of claim 40, wherein the step of laminating together the first substrate and the second substrate to form a liquid crystal cell is performed at about room temperature.

66. The method of claim 40, wherein the pre-polymer of the liquid crystal and pre-polymer mixture comprises aromatic amines and the spacers comprise an accelerator lacquer initiator comprising peroxide and the method further comprises selecting a combination of the pre-polymer and accelerator lacquer initiator to control a rate of free radical generation rate, which when combined with the diffusion rates of the pre-polymer and liquid crystal and spacings within a display region, result in the polymerization beginning in a region surrounding the spacers.

67. The method of claim 40, further comprising, after initiation of polymerization and before completion thereof, adjusting a rate of diffusion of the mixture of the pre-polymer and the liquid crystal material by at least one of adjusting reaction temperature and adjusting a viscosity

of the mixture of the pre-polymer and the liquid crystal material to produce variation.

68. The method of claim 67, wherein the step of adjusting comprises adjusting the reaction temperature to 45°C or more.

69. The method of claim 67, wherein the step of adjusting comprises adjusting the viscosity of the mixture of the pre-polymer and the liquid crystal material to be 1000 cps or less.

70. The method of claim 41, wherein the PIE material comprises at least one of a structural PIE element (SPIE) and a non-structural PIE element (NSPIE), wherein the SPIE element and the NSPIE element increases a peel strength and a compressive strength of at least one of the first substrate and the second substrate.

71. The method of claim 70, wherein the NSPIE element is in contact with one of the first substrate and the second substrate.

72. The method of claim 70, wherein the NSPIE element is not in contact with the first substrate and the second substrate.

73. The method of claim 70, wherein the SPIE element is in contact with the first substrate and the second substrate.

74. The method of claim 70, wherein the NSPIE element comprises at least one of glass and plastic and has a shape of at least one of a sphere and a rod.

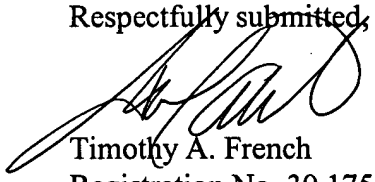
75. The method of claim 70, wherein the NSPIE element has a non-smooth surface.

76. The method of claim 70, wherein the NSPIE element is made of nonporous material.

Conclusion

It is respectfully requested that this amendment be entered prior to the examination of the above-referenced patent application. It is believed that no new matter is added by this amendment. By this amendment, claims 40-76 are now pending, among which claim 40 is an independent claim. If the Examiner desires any additional information, the Examiner is invited to contact Applicants' attorney at the telephone number listed below to expedite prosecution.

Respectfully submitted,



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Date: July 15, 2003

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